

# (12) UK Patent Application (19) GB (11) 2 226 489<sub>(13)</sub> A

(43) Date of A publication 04.07.1990

(21) Application No 8830357.3

(22) Date of filing 29.12.1988

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(51) INT CL<sup>5</sup>  
A42B 3/28

(52) UK CL (Edition K)  
A3V V11D  
U1S S1825

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(58) Field of search  
UK CL (Edition J) A3V  
INT CL<sup>4</sup> A42B 3/00 3/02

## (54) Ventilated safety helmet

(57) The present invention relates to an improved structure of a safety helmet comprising an outer shell 1, a helmet-like lining 2, and an intermediate plastics foam layer 3. Through air ventilation means 11, 13, 31 arranged at the forehead portion as well as a back portion 12, 14 of the outer shield to communicate with strip-like and elastic air vent chambers 20 of the helmet lining, air current is allowed to penetrate from the front air holes along the gaps along the elastic and strip-like air vent chambers through the back air holes to form a circulation of air current to provide better impact resistance effect substantially to eliminate wind noise, and to let the helmet wearer feel cool and comfortable. Due to the pressure generated the chambers 20 inflate, thus giving an improved cushioning effect.

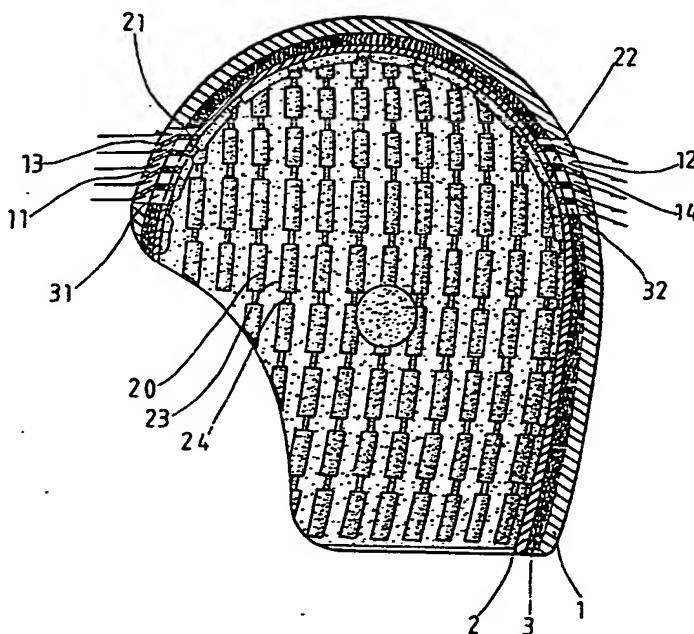


FIG. 1

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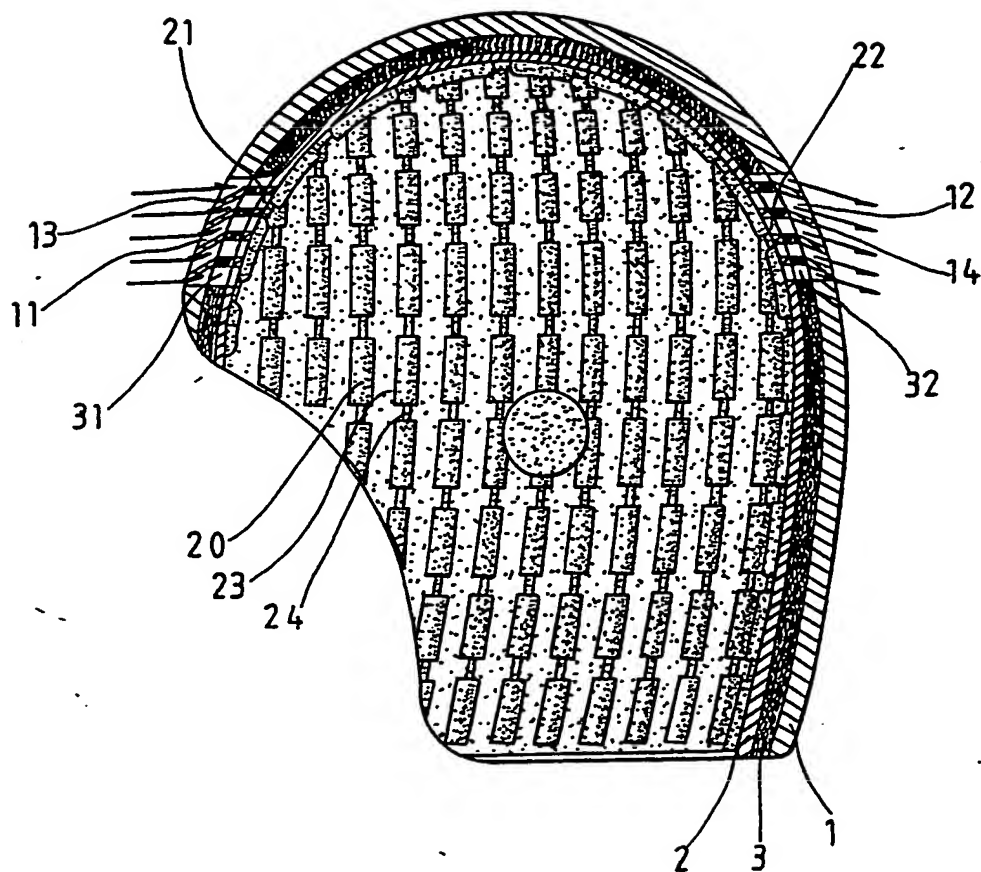


FIG. 1

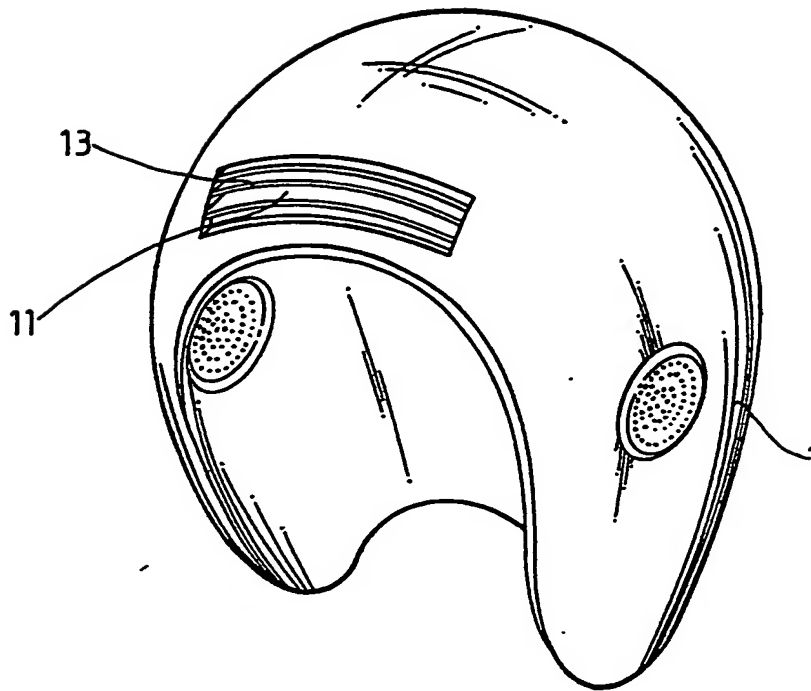


FIG. 2

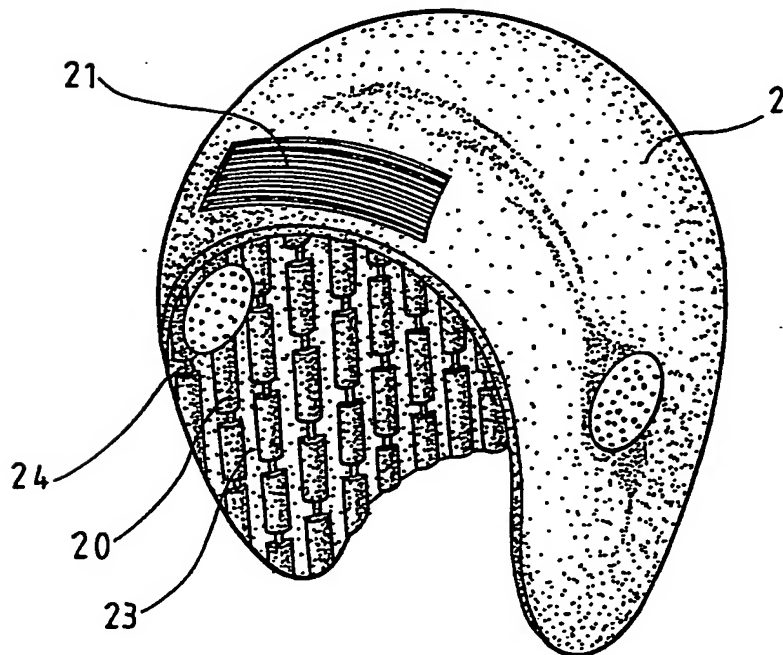


FIG. 3

IMPROVED STRUCTURE OF A SAFETY HELMET

This invention relates to an improved structure of a safety helmet.

Following the development of the transportation industry, the motorcycle has become one of the most popular forms of transportation vehicles in the developing countries. Following the increasing in the number of motorcycles, traffic accidents have increased daily. Because the motorcycle is not so safe as an automobile, each time an accident happens motorcycle riders are liable to be killed due to head injuries. Therefore, a safety helmet has become a requirement for motorcycle riders. While selecting a safety helmet, comfort and security are the main factors to consider. Although there are various helmets available on the market, the lining of regular safety helmets is made of solid sponge or polylone which has a poor ventilation property. It is really uncomfortable to wear a helmet on the head under the scorching sun. The sticky air inside the helmet may cause one to suffer sun-stroke.

Although there are some kinds of helmets which are designed to provide ventilating means, an air lock may occur within the air current guiding means. Therefore, the air which runs into the helmet may scatter inside the helmet to interfere with a rider's hearing and to cause serious discomfort. This problem may become more serious to affect the security and the record of the riders while competing in a motorcycle race. In view of such problems, there is much room for improvement of the conventional safety helmets. Therefore there is a need to provide a high performance safety helmet to serve motorcycle riders.

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According to the present invention there is provided a safety helmet comprising an outer shield, a helmet-shaped lining, and an impact resistant foam layer located intermediate the outer shield and lining; wherein the outer shield, the helmet lining and the intermediate foam layer are provided with respective air holes at the forehead portion as well as the back portion of the helmet to let air current penetrate into the inside space from the front air holes and run out of the present

safety helmet through the back side air holes to form a circulation of air current, wherein the air holes of the outer shield are comprised of a plurality of inclined air guiding plates, and the air holes of the helmet lining and the intermediate layer being made through perforations  
5 therein.

In one embodiment of a safety helmet according to the present invention the air vent type outer shield of the helmet comprises air holes at the forehead portion as well as the back portion of the helmet  
10 to let air current get into the helmet from the front air holes and run out of the helmet from the back air holes, so as to keep the inside space cool and to prevent scattering of the air stream as well as to reduce the interference of air noise with hearing.

15 Furthermore, the helmet-like lining is designed to provide a plurality of strip-like and elastic vent chambers communicated one with another through respective air tubes wherein the air tubes provide buffering effect to prevent the elastic vent chambers from exploding while bearing impact forces.

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An embodiment of the present invention will now be described by way of example with references to the accompanying drawings in which:-

Figure 1 is a sectional view of a safety helmet embodying the  
25 present invention,

Figure 2 is a perspective view of the outer shield of the preferred embodiment of Figure 1, and

30 Figure 3 is a perspective view of the helmet-like lining of the embodiment shown in Figure 1.

Referring to Figures 1 to 3, a safety helmet comprises an outer shield 1, a helmet-shaped lining 2, and a plastics foam layer 3,  
35 available under the trade name Polydone, arranged therebetween. The

outer shield is arranged to have elongate air holes 11, 12 at the forehead portion as well as at the back portion thereof. The air holes 11, 12, respectively, include a plurality of inclined air guide plates 13, 14 mounted on the outer shield. The helmet-shaped lining 2 and the  
5 intermediate polylyone layer 3 are also designed to provide separately spaced air holes 21, 22 and 31, 32, respectively, arranged at the forehead portion and the back portion of the helmet to match with the air holes 11, 12 of the outer shield 1. The helmet lining 2 which is made of a plastics cloth is also designed to provide a plurality of strip-like  
10 ribs defining a plurality of elongate elastic air vent chambers 20 with gaps 23 therebetween. In use the air current penetrates into the helmet through holes 11 of the outer shield 1 and through the gaps 23 into the whole inner space and is further guided towards the back of the helmet through the air holes 12 to form a circulation path and to cool the head  
15 to let the people who wear the helmet feel comfortable.

The smooth circulation of air current thus achieved prevents the air from scattering in the gaps 23 of the helmet-like lining 2, therefore no air noise will interfere with a rider's hearing. Further, in the  
20 helmet-shaped lining 2, the elastic and strip-like air vent chambers 20 are arranged to communicate with one another through air tubes 24 to facilitate the circulation of air current such that the air vent chambers 20 are well protected from explosion while bearing impact force, and the impact resistance of the intermediate polylyone layer 3 is reinforced.  
25 Therefore, the head of the motorcycle rider who wears a helmet according to the present invention will be well protected by the present helmet.

CLAIMS:

1. A safety helmet comprising an outer shield, a lining and an impact resistant foam layer located between the outer shield and lining, wherein the helmet has a plurality of apertures located at the front of the helmet and at the rear of the helmet for allowing the passage of air into and out of the helmet, the apertures located thereon having air guide plates which are mounted on the outer shield for directing air flow into the helmet.
2. A safety helmet as claimed in claim 1, wherein the helmet lining is arranged to be expandable during passage of air through the helmet to provide a plurality of projections inwardly of the helmet which serve to prevent scattering of air flow within the helmet.
3. A safety helmet comprising an outer shield, a helmet-shaped lining, and an impact resistant foam layer located intermediate the outer shield and lining; wherein the outer shield, the helmet lining and the intermediate foam layer are provided with respective air holes at the forehead portion as well as the back portion of the helmet to let air current penetrate into the inside space from the front air holes and run out of the present safety helmet through the back side air holes to form a circulation of air current, wherein the air holes of the outer shield are comprised of a plurality of inclined air guiding plates, and the air holes of the helmet lining and the intermediate layer being made through perforations therein.
4. An improved structure of safety helmet according to claim 2, wherein the helmet lining is made of a plastics cloth and arranged to provide a plurality of strip-like and elastic air vent chambers communicated with one another through respective air tubes and having a plurality of gaps among the elastic air vent chambers; by means of said arrangement the air current being guided to fill the whole inner space of the head portion and to run out of the helmet through the back side air holes to form a smooth circulation so as to prevent from explosion of elastic air vent chambers and scattering of air current, and to provide better buffering effect and impact resistance property.

5. A safety helmet substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.